Ownership structure, leverage and firm value

Author's Details: **(1)Wissem Daadaa-**
University of Carthage- FSEG Nabeul- Tunis –Tunisia
(2)Mohamed Anis Daadaa-University of Tunis El Manar- FSEGTunis-Tunisia

Abstract
This study analyzes the effect of ownership structure on leverage and firm value of French firms from 2006 to 2012. In particular, we classified ownership on three groups: High, medium and low concentration structure. High ownership concentration incite firms to uses more debt and then increases leverage. We find that the effect of the ownership is positive on leverage and firm value. The result confirms the cost agency hypothesis; high leverage therefore improves the firm performance. This effect is more important for firms characterized by dispersed ownership structure.
Keywords: Ownership structure, firm performance, capital structure.

1. Introduction:

Papers analyzing the relationship between, leverage, ownership structure and firm value have produced mixed results in corporate governance literature. These conflicting results were always explained by factors related to the characteristics of firms like size, level of intangible assets, tangible, profitability, capital structure or ownership problem between managers and shareholders.

To resolve conflict between owners and managers, many authors present various control mechanisms imposed by the firm shareholders (Jensen et Meckling (1956)), Williams (1988), argues that managers can defeat theses mechanisms and neutralize their effect.

Demsetz and Villalonga (2001) argue that the relationship between ownership structure and performance cannot be identified without distinction between firm ownership, capital structure and control. Michael and Santor (2008) consider that this relationship between managerial ownership and firm performance is endogenous.

Our study seeks to address all these issues, and the contribution of this work lies in the following inputs: First, we collect annual data for French companies listed in CAC 40 index and identify capital structure and ownership class for each firm. Then the firm performance, leverage are classified by ownership concentration groups. Finally, we distinguish the effects of different ownership structures on leverage and firm performance.

This paper is organized as follow; section 2 analyze the relationship between capital structure and firm performance, section 3 reviews the effect of ownership structure on leverage and firm value and section 3 present our methodology and result, section 4 concludes.

2. Capital structure and firm performance:

Financial literature relative to capital structure considers that leverage can have either positive or negative effect on firm performance.

Jensen and Meckling (1976) present the interests difference between managers and shareholders and predict that managers tend to maximize their own interest rather than the firm value. Managers have to take excessive risks in their investment strategies, using more debt to reduce this conflict.

Harris & Raviv (1990) analyze the effect of structure capital on firm performance and present the factures explaining this relationship as profitability, growth prospects, the asset structure, size, risk, taxation and dividend policy.

The firm financial performance, based on profitability, has been identified as a potential determinant of capital structure. The pecking order argues that highly profitable firms use retained earnings first, and then uses external financing in their capital structure (Myers & Majluf, 1984).

Mackie-Mason (1990), using tax-based models, show that profitable companies are those who use the most debt because they need to protect their incomes face the corporate tax.

This is consistent with the trade off theory; companies use debt to reduce tax payments, and the most beneficiary companies should have higher debt ratios than others.

Myers (1977) argues that firm with high growth potential tend to have less leverage.

Rodden & Lewellen (1995) find that the effect of firm size on leverage can be explained by three factors: risk of bankruptcy, costs bankruptcy, and market access. For this reason, large companies will be financed with more debt than small firms. This view is corroborated by Rajan and Zingales (1995) who find that there is a positive relationship between firm size and debt financing.

Lai Thi Phuong Nhung, Hidenobu Okuda (2015) investigates the capital structure and firm profitability on the Ho Chi Minh Stock Exchange by estimating their debt ratios. The estimation results show that first, the capital structures matched the features of standardized corporate financing theories better than those of small- and medium-sized firms.

3. Capital structure, ownership and firm performance:

Voluminous literature analyzes the relationship between ownership firm, capital structure and performance on corporate governance literature, the results are controversial.

A consensus that comes out of this literature is that interaction between this variables affect firm value. If Jensen (1990) found a positive effect of managerial ownership on firm performance; Morck et al (1988)) found that the effect is negative. They find that large companies in the United States, where the ownership is dispersed among small shareholders and control is concentrated in the hands of insiders, tend to achieve low performance.

Claessens et al (2002) predict that large controlling shareholders increase firm value. Demsetz and Villalonga (2001) find no relationship between the capital concentration and firm performance. Dimitris and Psillaki (2010) summarize the contrasting effects of efficiency on capital structure using two hypotheses: the efficiency-risk and franchise value hypotheses. They believe the role of ownership structure and leverage on firm value.

To resolve the agency problems, the external block holders reduce the managerial opportunism by using higher debt ratio as a control mechanism of manager's performance.If the level of managerial ownership is low, firm managers use more debt and increase.

Myers (1984) provides a negative relationship between profitability and leverage; he finds that firms prefer to finance new investments with internal funds rather than debt.

King and santor (2008) finds that firms controlled by family or financial institutions use more debt in their capital structures.

Isabelle Ducassy, Sophie Montandrau (2015) tests the influence of shareholders on corporate social value. Specifically, with a sample of French listed companies, the authors investigate how ownership concentration, ownership type, and governance practices relate to CSP. They conclude that neither family nor institutional shareholders influence corporate social performance.

Chune Young Chung, Kainan Wang (2015) analyses the dynamic relations between institutional ownership and a firm's capital structure. They concludes that firm's leverage decreases when institutional ownership increases and that firm decrease its debt level as institutional investors substitute for the monitoring role of debt. Their result prove that firm's suboptimal leverage decreases when the institutional ownership increases, and institutional ownership decreases when a firm's suboptimal leverage increases.

4. Empirical analysis:
4.1: Data:

We investigate the relationship between leverage, ownership and firm performance using a sample of French listing company in CAC 40 index. We eliminated the financial companies from the sample because of their specificities.

The overall sample is composed of 30 non-financial corporations including the CAC40 index. The study period ranges between 2006 and 2012.

Table (1) presents the statistics of our sample, we present theirs characteristics: returns, performance, capital structure, ownership and results. Tables (1 and 2) demonstrate that the sample was composed, generally, by larger companies (Total average assets 49 359 € 495 million), which realize the best performance (average profit per year of the study is 1,903,510 million €), with high stable resources and significant debt capacity (Equity means of 19,319,869 M €).

The average ownership of main shareholders (above 50% equity holding) is 50.38%. Ownership of shareholders holding between 25% and 50% is 23.89%. The average of the low ownership concentration is 25,74%.

4.2: Regression Model:

To test the effect of the ownership structure and leverage on firm value we use panel model.

We solve the sample heterogeneity problem by using the panel regression technique. Coles, Lemmon and Meschke (2007) suggest that the panel model is adequate to solve the problem unobservable heterogeneity of firms.

To test the firm performance we used two variables:
(1) the market performance measured by the Tobin'Q indicator;
(2) the accounting performance, calculated by the ratio Return on assets ROA.

Tobin's Q ratio measures the market's valuation of the firm's assets relative to book value.

ROA (return on assets) is a measure that reflects the role of the accounting firm, seen as a measure of profitability or productivity.

The firm characteristics related control variables are: profitability, size, asset structure, growth opportunities, and ownership structure.

Profitability (ROA) is measured by the ratio of profits (Earnings Before Interest and Tax) on the total assets. In general, we expect a positive effect of profitability on firm performance.

Firm size (SIZE) is measured by the natural logarithm of firm turnover.

The effect of this variable on the performance is generally positive, large companies are able to use better technology, so they are more diversified and better managed.
Assts Tangibility (TANG) can be used as an indicator for debt agency costs (Myers 1977 and Booth et al. 2001). Firms with more tangible assets generally have a greater capacity for debt, these assets can be used as a guarantee in case of insolvency (Jensen and Meckling 1976). Thus, the tangibility has a positive impact on the leverage (Titman and Wessels 1988). The assets intangibility ratio can be used both as a proxy for growth opportunities.
Tangibility (TANG) is measured by the ratio of tangible assets divided by total assets. Intangibility (INTG) is measured by the ratio of intangible assets to the firm capital. This variable can be viewed as an indicator of future growth opportunities (see Titman

and Wessels 1988), but its effect on the company's performance is generally ambiguous.
Sales growth (GROWTH) is an indicator of growth prospects and the company's investment opportunities. It is likely to have a positive effect on the company's performance.
When the opportunity for growth is considered as an indicator of the project investment success, the effect of growth on the leverage will be positive.
The ownership structure may have a positive or negative effect on leverage. The firm ownership structure influences the capital structure determination.
After analyzing the performance variables, profitability and structure of firms, we test the effect of ownership structure on performance and leverage.
We classified ownership concentration by three different groups: high, medium and low concentration.
Ownership concentration (OWNC) is the proportion of shares held by the controlling shareholders.
We divide ownership into three groups. The first group, represented by the OWN1, composed by low concentration firm with firm holding less than 25% of capital.

The second group is the intermediate concentration firm (OWN2), with a holding of 25% to 50% of capital, and finally the high ownership concentration (OWN3) with above 50% shareholdings.

	Total Assets	Market value	Total debt	Age	Economic Résultat	Share Price : 31/12
Mean	49 359 495	29 854 152	33 222 400	93.26	3 282 904	43.84
Median	31 859 000	18 525 000	20 917 575	84.5	1 964 900	38.705
Maximum	250 118 000	200 060 992	219 406 000	347	24 989 000	138.8
Minimum	1 118 000	2 908 000	1 429 806	18	-955 000	5.4
Std. Dev.	51 199 521	33 328 039	38 540 133	63	4 207 458	25

	Shares nomber	INTANG	TANG	Profitability	Market value	Capital
Mean	386 070	4 866 989	13 867 107	1 903 510	16 829 972	19 319 869
Median	287 251	2 551 000	6 103 000	1 243 000	11 177 595	10 624 000
Maximum	1 247 263	27 340 000	129 436 000	13 181 000	92 281 848	349 070 000
Minimum	53 038	24 195	458 000	-3 068 000	785 723	2 131 100
Std. Dev.	260 372	6 086 728	24 245 941	2 302 491	16 368 784	31 403 631

	Group 1 : High concentration , sup 50%	Group 2 : Intermediate concentration , Act between 20- 50%	Group 3 : Low concentration , between 0-25%
Mean	0.5038	0.2389	0.2574
Median	0.6268	0.0000	0.2189
Maximum	0.9798	1.0000	0.6900
Minimum	0.0000	0.0000	0.0000
Std. Dev.	0.3444	0.3386	0.1804

Table (1) : descriptive statistics of the firms sample.

	Qtobin	ROA	LEV	Log AGE	SIZE	TANG	INT ANG	CAP/ SALES	GROw	OWNC
Mean	1.071	0.027	0.660	5.635	7.566	0.268	0.069	0.413	0.017	0.654
Median	1.050	0.029	0.624	5.841	7.637	0.308	0.068	0.429	0.044	0.670
Maximum	1.261	0.039	0.818	5.849	7.677	0.312	0.076	0.476	0.065	0.679
Minimum	0.950	0.006	0.586	4.394	7.088	0.041	0.066	0.332	-0.137	0.612
Std. Dev.	0.115	0.011	0.073	0.508	0.196	0.093	0.003	0.049	0.066	0.026
Skewness	0.574	-0.814	1.242	-2.041	-2.001	-2.015	1.395	-0.509	-1.726	-0.830
Kurtosis	1.789	2.411	3.398	5.166	5.079	5.106	3.824	1.912	4.456	1.851
Jarque-Bera	24.355	26.259	55.389	186.830	177.8	180.8	74.0	19.421	122.864	35.674
Probability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sum	224.969	5.665	138.511	1 183.408	1 588.7	56.2	14.5	86.671	3.525	137.412
Sum Sq. Dev.	2.751	0.026	1.121	53.892	8.060	1.817	0.002	0.502	0.902	0.145

Table 2 (a) : Descriptive statistics Model: Profitability (ROA) is measured by the ratio of profits (Earnings Before Interest and Tax) on the total assets, QTOBIN is the ratio of total assets to the market value. Firm size (SIZE) is measured by the natural logarithm of firm turnover. The Tangibles (TANG) is measured by the ratio of tangible assets divided by total assets. Intangibility (INTG) is measured by the ratio of intangible assets to the company's capital. Sales growth (GROWTH) is the variable in the growth rate of sales. Own is the vector of variables related to the shareholder of the company structure. Financial leverage is the ratio of total debt (short-term and long-term) on total assets. Ownership concentration is measured by the variable (OWNC) that equal to the proportion of shares held by major shareholders.

	Qtobin	ROA	LEV	log AGE	SIZE	TANG	INTANG	CAP/ SALES	GROWTH
Mean	1.07	0.06	0.68	4.35	7.48	0.23	0.11	0.87	0.06
Median	1.07	0.04	0.65	4.42	7.64	0.19	0.07	0.59	0.05
Maximum	3.01	0.61	4.81	7.33	8.40	0.86	0.51	10.46	1.48
Minimum	-0.94	-0.05	0.34	2.89	0.40	0.02	0.00	0.04	-0.31
Std. Dev.	0.58	0.07	0.41	0.69	0.79	0.15	0.11	1.37	0.17

Table (2b) : Descriptive Statistics for ownership group n°1(OWN1)

	Qtobin	ROA	LEV	log AGE	SIZE	TANG	INTANG	CAP/ SALES	GROWTH
Mean	1.58	0.06	0.61	4.22	7.38	0.19	0.13	0.59	0.10
Median	1.54	0.06	0.61	4.59	7.38	0.15	0.09	0.66	0.07
Maximum	3.04	0.11	0.84	4.69	7.88	0.50	0.32	0.99	1.36
Minimum	0.77	-0.01	0.29	3.00	6.75	0.07	0.01	0.13	-0.15
Std. Dev.	0.56	0.03	0.15	0.59	0.24	0.13	0.10	0.25	0.24

Table (2c) :Descriptive statistics for ownership group n°2(OWN2)

	Qtobin	ROA	LEV	log AGE	SIZE	TANG	INTANG	CAP/ SALES	GROWTH
Mean	5.24	0.06	0.95	4.61	7.47	0.40	0.12	0.72	0.03
Median	1.07	0.03	0.66	4.97	7.60	0.26	0.02	0.61	0.02
Maximum	69.52	0.74	6.01	5.19	7.95	3.48	0.59	1.43	0.58
Minimum	0.74	-0.01	0.51	3.56	6.05	0.07	0.01	0.18	-0.17
Std. Dev.	14.84	0.16	1.17	0.58	0.43	0.72	0.18	0.42	0.15

Table (2d)) :Descriptive statistics for ownership group n°3(OWN3)

Correlation
Probability

	QTOBIN	ROA	LEV	AGE	SIZE	TANG	INTANG	CAP/SALE	GROW	OWNC	OWN1	OWN2	OWN3
QTOBIN	1.000000												

ROA	0.751491	1.000000											
	0.0000	-----											
LEV	0.905470	0.603915	1.000000										
	0.0000	0.0000	-----										
LOG AGE	0.080037	0.025120	-0.106396	1.000000									
	0.2855	0.7378	0.1552	-----									
SIZE	-0.320502	-0.392882	-0.158327	-0.032385	1.000000								
	0.0000	0.0000	0.0338	0.6660	-----								
TANG	0.841314	0.676353	0.785287	0.108162	-0.119290	1.000000							
	0.0000	0.0000	0.0000	0.1484	0.1107	-----							
INTANG	0.276948	0.246782	0.288962	-0.102863	-0.077334	0.019376	1.000000						
	0.0002	0.0008	0.0001	0.1694	0.3021	0.7963	-----						
CAP/SALES	-0.069896	-0.039958	0.011161	0.032972	0.114451	-0.082346	0.413444	1.000000					
	0.3512	0.5943	0.8818	0.6604	0.1261	0.2718	0.0000	-----					
GROW	-0.003935	-0.010039	-0.007200	-0.036475	-0.079328	-0.035812	-0.015989	-0.053281	1.000000				
	0.9582	0.8936	0.9236	0.6269	0.2898	0.6332	0.8313	0.4775	-----				
OWNC	-0.160245	-0.004456	-0.122043	-0.059798	-0.069066	-0.039071	-0.072002	-0.100525	0.090808	1.000000			
	0.0316	0.9527	0.1027	0.4252	0.3569	0.6025	0.3368	0.1794	0.2254	-----			
OWN1	-0.173912	-0.065844	-0.100217	0.007659	-0.121365	-0.080007	0.028813	0.105348	0.063349	0.947642	1.000000		
	0.0196	0.3798	0.1807	0.9187	0.1046	0.2857	0.7010	0.1593	0.3982	0.0000	-----		
OWN2	-0.130149	-0.018084	0.095360	-0.100757	-0.003636	0.108488	0.008149	0.149457	-0.125775	0.810669	0.782108	1.000000	
	0.0816	0.8096	0.2029	0.1784	0.9614	0.1472	0.9135	0.0452	0.0925	0.0000	0.0000	-----	
OWN3	-0.016006	0.005215	0.017959	0.151765	-0.130533	-0.134595	-0.184378	0.067520	0.002726	0.060712	0.038729	0.261639	1.000000
	0.8311	0.9446	0.8109	0.0420	0.0807	0.0716	0.0132	0.3678	0.9710	0.4182	0.6057	0.0004	-----

Table (3) : correlation analyze

	Model 1 : QTOBIN	**Model 2 : ROA**	**Model3 : LEV**
C	***10.6982**	***0.3521**	***0.6437**
LEV	***6.0007**	0.0029	
LOG AGE	-0.0213	-0.0042	0.0131
SIZE	***-2.1486**	***-0.048**	-0.0675
TANG	***7.8421**	***0.1539**	***1.2125**
INTANG	***5.1137**	***0.1360**	***0.8915**
CAP/SALES	***-0.2449**	-0.0032	-0.0175
GROW	0.7144	0.0270	0.0395
OWNC	-0.4070	***0.0788**	***-0.6476**
OWN1	-0.5166	-0.0497	***0.4017**
OWN2	-0.1558	0.0012	-0.0513
OWN3	1.4923	0.0215	***0.1689**
R^2	91.7	63.27	72,9

Table (4) : Firm performance and leverage Model

	OWN1			OWN2			OWN3		
	QTOBIN	**ROA**	**LEV**	**QTOBIN**	**ROA**	**LEV**	**QTOBIN**	**ROA**	**LEV**
C	***5.7771**	***0.3682**	***2.3909**	***3.8816**	***0.9809**	***-0.3113**	***93.2735**	***1.0139**	***-2.6208**
LEV	-0.9925	0.0154		-1.5626	-0.1303		***17.1281**	0.1791	
LOG AGE	-0.0679	-0.0021	***0.1338**	-0.0954	-0.0324	-0.0160	-1.8301	-0.0285	0.0171
SIZE	***-0.4729**	***-0.0552**	***-0.3198**	-0.1349	***-0.0955**	0.1683	***-12.7268**	***-0.1337**	***0.4124**
TANG	-0.318	***0.1284**	***0.3708**	-1.1132	-0.0223	***0.4193**	***-8.6895**	-0.0848	***1.5089**
INTANG	0.3093	***0.1531**	***0.7367**	-3.5312	-0.2229	***0.5810**	***-23.3766**	-0.2578	***1.7797**
CAP/SALES	***-0.1964**	-0.0043	-0.006	1.2011	0.0484	***-0.6828**	***7.0268**	***0.1004**	***-0.5547**
GROW	0.2945	0.0412	0.2513	-0.0228	0.0163	-0.0334	6.2247	0.0173	-0.2524
OWNC	-0.0108	***0.074**	-0.1139				***4.6599**	0.0442	-0.0638
R2	54,34	58,21	58,59	69,44	88,84	89,09	99,71	98,35	99,52

Table(5) : Firm performance and leverage Model by ownership groups.

4.3: Empirical result:

Table (2a) presents the characteristics of the model variables: mean, median, max, min, standard deviation, these variables are related to the firm performance, capital structure, ownership structure and its level of debt.

Tables (2b-2c-2d) present the descriptive statistics of our firm's sample.

The result prove, that 75% of firms are characterized by a high ownership concentration, the more dispersed ownership structure is characterized by a good performance.

Table (3) analyzes the correlation relationships between different variables in our model.

Table (4) demonstrate that in Panel A: where the dependant variable is Q TOBIN, significant independent variables are related to leverage, firm size (SIZE), tangible assets (TANG) or intangible (INTANG) and equity sales (CAP / SALES).

We can conclude, then, that the leverage affects the firm performance. The positive effect of financial leverage on firm performance (Model 1) confirms the cost agency hypothesis; high leverage therefore improves the firm performance. This effect is more important for firms characterized by dispersed ownership structure (see Table 5).

This result corroborates Jensen and Meckling (1976) who concluded that firm tangible assets is an indicator of the strong ability of firm to pay her debt. The existence of this guarantee reduces agency costs related to debt, these assets can therefore play an important role in preserving money borrowers.

Intangible assets can be perceived by lenders as a means of security for their loan monies, the effect will be positive on the leverage and the performance of the firm.

In panel (B) when the dependent variable ROA is used, the same variables TANG, INTANG and size (SIZE) are significant, this confirms the results of the model (1). However, we found no relationship between the dependent variable (ROA) and the leverage (LEV). The ownership structure concentration (OWNC) are also significant in this model. Similarly, the firm performance is associated to ownership concentration level.

For the panel (C) where the dependent variable is the firm leverage(Lev), significant variables are assets tangibility (TANG) and assets intangibility (Intang) on a dispersed ownership structure (OWN3).

The results in Table (5) show that for different groups of ownership structure, performance is related to the capital structure. The leverage of the firm is positively associated with the level of ownership concentration.

Firms characterized by a high ownership concentration generate the highest profit and have the less levels of debt in the capital structure.

The tables (4) and (5) prove that the leverage has a significant effect on size and growth opportunity.

These results contradict those of Both et al (2001) who find that firms with high growth opportunity (low TANG and Intang) reduce agency costs between managers and owners.

5. Conclusion:

In this paper we investigated the relationship between the firm performance, leverage and shareholding structure. This analysis is conducted using a sample of French companies in the Paris Stock Exchange (CAC 40 Index).

To test firm performance we used two dependent variables as a proxy; The first is the Qtobin , the second is the Return on Assets ROA. These models were tested using variables associated to firms' characteristics, capital and ownership structure. Our sample is classified into different groups related to ownership concentration.

The results support the hypothesis of Jensen and Mekling (1976) that leverage is positively associated to firm value. The effect of rooting and alignment is related to the ownership structure.

We also find that the effect of the ownership is positive on leverage and depend with the level of ownership structure. High ownership concentration incite firms to uses more debt and then increases leverage.

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